

SPINDLE MOTOR AND DISK DRIVE UTILIZING THE SPINDLE MOTOR

Abstract

Low-profile spindle motor whose entire shaft length is utilized to configure, along an encompassing sleeve, a radial dynamic-pressure bearing section. One end of the shaft is unitary with the rotor, and a cover member closes the other end. Between the sleeve upper-end face and the rotor undersurface a thrust bearing section is configured. Micro-gaps are formed continuing between the sleeve upper-end face and the rotor undersurface; the sleeve inner-circumferential surface and the shaft outer-circumferential surface; and the cover member inner face and the shaft end face, where an axial support section is established. Oil continuously fills the micro-gaps, configuring a full-fill hydrodynamic bearing structure. Hydrodynamic pressure-generating grooves in the radial bearing section are configured either so that no axial flow, or so that a unidirectional flow that recirculates from one to the other axial end of the radial bearing section through a communicating pathway is induced in the oil.